Technology Opportunity

Ref. No. BI6070R

Title Ascorbyl Palmitate Hydrogel Composition for the Treatment of Leaky Gut, including in Castration-Resistant Prostate Cancer

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Invention	The invention concerns the oral use of ascorbyl palmitate (E 304), and of compositions containing it as active ingredient, for the treatment of increased intestinal permeability (leaky gut). The preferred form is a hydrogel, or a powder that forms a hydrogel on contact with gastric fluids, optionally with hyaluronic acid or other gelling agents. Unlike its known use as a carrier, ascorbyl palmitate here acts as a mechanical barrier protecting the intestinal epithelium, reducing the passage of microorganisms and harmful substances. The invention also covers compositions that reduce intestinal permeability for use in patients with castration-resistant prostate cancer, alone or combined with anticancer therapies.
Background	An intact intestinal barrier prevents the passage of pathogens, pro-inflammatory substances and antigens. Increased permeability (leaky gut) is associated with inflammatory bowel disease and irritable bowel syndrome. Current approaches rely on diet and supplements such as prebiotics, probiotics, fibre and glutamine; a solution giving direct mechanical protection of the intestinal epithelium is still needed. Ascorbyl palmitate is used as a source of vitamin C and as an antioxidant food additive, and its hydrogels have been described as carriers for intestinal drug delivery. In prostate cancer, androgen deprivation therapy can increase intestinal permeability, allowing microorganisms to move from the gut to the tumour and influence the intratumoural immune response.
Advantages	Active ingredient already approved as a food additive; mainly mechanical mode of action; oral hydrogel or gel-forming powder; in vivo proof of concept; can be combined with anticancer therapies.
Field of Use	Leaky gut associated with inflammatory bowel disease, irritable bowel syndrome, ulcerative colitis, celiac disease, type 2 diabetes, obesity, anxiety, depression; castration-resistant prostate cancer.
Patent Status	Patent application No. 102026000007708, filed March 23, 2026.
Keyword(s)	Leaky gut; intestinal permeability; ascorbyl palmitate; hydrogel; hyaluronic acid; mucosal barrier; castration-resistant prostate cancer; androgen deprivation therapy; immunotherapy.
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